SEQUENCE LISTING

<110> Holloway, James L.
Webster, Philippa J.
Thayer, Edward C.

<120> Mammalian Glycoprotein Hormone-1

<130> 00-34D1

<150> US 09/943,388
<150> 2001-08-30

<150> US 09/839,706
<150> 2001-04-20

<150> US 60/199,498
<150> 2000-04-25

<160> 44

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 390
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(390)

<400> 1

```
atg aag ctg gca ttc ctc ttc ctt ggc ccc atg gcc ctc ctc ctt ctg       48
Met Lys Leu Ala Phe Leu Phe Leu Gly Pro Met Ala Leu Leu Leu Leu
 1               5                  10                  15

gct ggc tat ggc tgt gtc ctc ggt gcc tcc agt ggg aac ctg cgc acc       96
Ala Gly Tyr Gly Cys Val Leu Gly Ala Ser Ser Gly Asn Leu Arg Thr
             20                  25                  30

ttt gtg ggc tgt gcc gtg agg gag ttt act ttc ctg gcc aag aag cca      144
```

```
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Leu Ala Lys Lys Pro
         35                  40                  45

ggc tgc agg ggc ctt cgg atc acc acg gat gcc tgc tgg ggt cgc tgt      192
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
     50                  55                  60

gag acc tgg gag aaa ccc att ctg gaa ccc ccc tat att gaa gcc cat      240
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala His
 65                  70                  75                  80

cat cga gtc tgt acc tac aac gag acc aaa cag gtg act gtc aag ctg      288
His Arg Val Cys Thr Tyr Asn Glu Thr Lys Gln Val Thr Val Lys Leu
                 85                  90                  95

ccc aac tgt gcc ccg gga gtc gac ccc ttc tac acc tat ccc gtg gcc      336
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala
            100                 105                 110

atc cgc tgt gac tgc gga gcc tgc tcc act gcc acc acg gag tgt gag      384
Ile Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125

acc atc                                                             390
Thr Ile
    130
```

<210> 2
<211> 130
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Lys Leu Ala Phe Leu Phe Leu Gly Pro Met Ala Leu Leu Leu Leu
 1               5                  10                  15
Ala Gly Tyr Gly Cys Val Leu Gly Ala Ser Ser Gly Asn Leu Arg Thr
            20                  25                  30
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Leu Ala Lys Lys Pro
        35                  40                  45
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
    50                  55                  60
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala His
65                  70                  75                  80
```

```
His Arg Val Cys Thr Tyr Asn Glu Thr Lys Gln Val Thr Val Lys Leu
                85                  90                  95
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala
            100                 105                 110
Ile Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125
Thr Ile
    130
```

<210> 3
<211> 5605
<212> DNA
<213> Homo sapiens

<400> 3

```
atgaagctgg cattcctctt ccttggcccc atggccctcc tccttctggc tggctatggc      60
tgtgtcctcg gtgcctccag tgggaacctg cgcacctttg tgggctgtgc cgtgagggag     120
tttactttcc tggccaagaa gccaggctgc aggggccttc ggatcaccac ggatgcctgc     180
tggggtcgct gtgagacctg ggaggtgagt tgctaagttg tgcagatgac agtgtcttct     240
aggccagcag cttgggtctg attcttaaga gttcactttt taaatgatat gaggtagagc     300
tgggacatct gccctttcct gtggacttaa aaaaccaaaa caaaactatg attggcatct     360
tccaaaagtg atttgaaaaa catgatgttg cccctctaac aaagcattga taaggttaag     420
aatttggttt acattgtgtc tatgtatctg ggaatcatct ctgggaggtc aagatgtact     480
gttctacccg ttttacagat gacatggagg gattcaaggg agagtggctg caaagtcacg     540
tagagcgtca gtgtaaagct gggaatcaat ttgtggttca agcttgtgac ccaaactcct     600
ccctatgttt cctcattttg gataaattag ccagtttcca agaaagaggc cctgagctga     660
agggtgagcg ttggtcccag tgaagggtga gacccccttca ctgcctcttc tgcagccctt     720
ttcctcctca agtctctggg agccctctgg ggttatcact gacggatcca ttaagttcct     780
tcatattcaa ttatacctgg ccttttttaga gacatttaat ttaaagtgga gataacactc     840
tcaaacaaag ttaaaatcct attgggctaa gaggagctgt ttgagtgatg aagaggaaga     900
gagctattca gcaccccagc agatcacatt acgtagtgac tgtgggctct tcccccctgag     960
gcctgcccac ttggtaacca atgaagtgct gtctctgatc ttgtcactcc ctggcccaaa    1020
aaccttgaat gtccacacac tactacagat tcaataacta actttcaagg tgctcagcaa    1080
tatggcgtct gcctgctttc ctggagacag cacattttct tactctggcc ttggtaagtg    1140
actttcaaag gttttatcaa atagccctta tggatctcat tttgttcctt ccctcatatc    1200
ccttctcctt cccatctgtc attatcatat ttattcctga tgcctatctg cagtgccagc    1260
tccctttctg ggccttttt gacttgcagg taagcccttg actatgctct acttttcgtc    1320
ttacttcctc ccccaccaca cgcgtgattt aaatttttc aggacagagg ttcattctta    1380
taaccttcac agcttttgtc aagatgtcgt gtatgaacaa ggcattcaat acacatttgt    1440
tggttgactg ggatggacct ccccctggag ctgtagatcc tccagcctaa tggaaggcca    1500
tttagaatca cacttgcact gtgagtggac actgccattg ggaaaaatag ccttctcttt    1560
ggggacccag agggtaacct gctcttgctt aggtacaatt acggccctgt gaatggaatt    1620
gggtcatagt gatgaaatct ccaaattgga tgaaactact ctatcaaagt agttttcttt    1680
```

tgcctcattc aggggcttga gccctactag cccaatgaaa atcgggtttt gctaagtaga 1740
ctttgcctgt caattggcag caaattcacc tggggcactt ggcacctcct cctgttcagg 1800
gactggcctg gcagggcctc tccctgttcg catctagtgt ctgggctatt tgaagccctc 1860
tctgtgccaa atcctcaaac tcctgcttcc gttcgattca gcccatcttc tcttcttttt 1920
aaaaactgat gaatgtcttt aattggatca tggtcaccca taggaggtca ggaactgtgc 1980
tctcactgga aagatggaaa caccaaaacc gttaaagaac aagattctcc ctgatgttag 2040
ccagctttca ttcatgtctt gactgtgtta tgaaaaggga ggttacctat agaaaataaa 2100
taaaagaatg agattcattt tcccagcaat ctgaaagttt ctgcgctata aagcacttga 2160
ttttttggtg ggggggatct taactgaaag catgtctgaa aataaggatg ttcatgatga 2220
caggctggct ggatttacat ttgaaggttg ttgaaaatag ctattcctca taatctgggt 2280
atagagttgc cagatttagc aaacaaacaa acagacaaac aaaataaaac aaaaccaatc 2340
ccctccccac agaaacccaa actgaaataa aaccagaaaa ccaggaagcc caggtaaatt 2400
tgaatttaag ataaataata aataaatttt tagcataagt ctgtctgtct catacagtat 2460
ttgggatgac ttatactaaa aaattatgta tctgaaaatg aaattttatg gggcgtttgg 2520
tctgcctagg ttcccagagt actaatggta agaggactta aagcaaatac gggaaggtag 2580
gagaaaacag ttgaggacaa attcagctct tctggtcttt gtcaaaggca aggctggccg 2640
ggcgtggtgg ctaacacctg taatctcagc actttgggag gctgtggtgg gtggataatg 2700
aggtcaggag ttcgagacca gcctggccag tttttagtaa agaggtgagt aaaaccctgt 2760
ctctactaaa aatacaaaaa ttagccgggc atggtggtat gcacctgtag tcccagctac 2820
ttgggaggct gaggcagaag acttgcttga acccaggagg tggaggttac agtgagccaa 2880
gatcatgcca ctatactcca gcctggcgac agagtgagac tccatctcaa aaaaaaaaaa 2940
aaaaagaaaa aagaaaaaaa aaaggtaagg ctgctatttt catgacattc atgcaagaac 3000
atcttgagtt acatatgtat atatattctt ttttgcctag aacaaagaag aaccaaaaag 3060
caaaggtact gtcatttgaa agcttgttat tatttacatt actttcttat aataattgca 3120
ctaataagaa caatggattg gctgggcgtg gtggctcacg cctgtaatcc cagcactttg 3180
ggaggccgag gcaggcagat cacgaggtca ggaaatcgag accatcctgg ctaacatggt 3240
gaaaccctgt ctctactaaa aatacaaaaa atgagccagg cgtggtggtg ggtgcctgta 3300
gtcccgggag gctgaggcag gagaatggcg tgaacccggg aggcggagat tgcaatgagc 3360
tgagattgcg ccactgaact ccagcctggg agacagcaag actccgtctc aaaaaaaaaa 3420
aaaaatggat tgcatttttt gaacatttac tttgttctag acattgtgca ttgcgtatat 3480
catcttacct tatctctcaa acaatggtgg gaggtagcta ttttgtttta cagaggagga 3540
aacttgagtc ttcaggaagt taagtggatt ttccaaggtc tccagcaagt ggcagaacag 3600
ggactcaagc tccttagttc tgactgcagg gctcgagatt ttaactccag ctaggtgctg 3660
atatttttc tgatctgtgt gttctgttta tcaaaattgt ctttgaactt aagatttata 3720
aaaggtgaag gaaggaaatg aatctttttg atgatcagaa cagtgcacag agtattcggg 3780
aacctgtctt gtaatgtttt ctttcattga ttcaatgaca aatagttatt gaaactctcc 3840
cagggtctgt tttgggtact tgaggcacag tgggcaaaaa tctctgtcct aaaagagctt 3900
actttctaga gtgggaggaa tatcacacga atgaaaggta gactacgtcg tgtggtattg 3960
atcagtgctg tggtggaaaa taaagcaaga tgggggatgg gaagtttctg ggcatggaga 4020
tggaatgttg caattttaaa taggatggtc aggaaatgct tccctgagag ggtgacattc 4080
taacaaaaac ccaaggttgg tgaaagagtg aatcatacgg gagaagaatg ttccaggcag 4140
aaggaacagt aagtgcaaag gccctgagct ggggctgttc ctggtgggtc agaggagcaa 4200
taaggagacc gccgtgagcc tagtgaggaa gtcagtgagg tgggaatggt tgcaggcatt 4260

```
tcagaaggta gagttgcaga gaaggtgatg taggtcttga aggtgatcat aaggtctttg    4320
atgtttgttc tgagtgagat gggaaatcac tggggctttg ggcagaggag taacatgatc    4380
tgacttaggt ttaaacagga tcactcaggg ccgctgtgtt gcaaatagat tgtagggagt    4440
aaaaatggaa gaggggagac cagttagaag gtatttgcaa tgactaagat gattcatttg    4500
ctgactatgc atggagcact tgctgtgtgc tatggtctct cctgggagct tagaatatgg    4560
tcttgagtga aatcagcttc ttgctttcag gagtttgttt tctactggga gacgacagag    4620
caacaagtaa atcaacgaat aacaagttaa tttctgatag tgataaatga tactaaaaaa    4680
ctgaaacaag atcatatgtt ctaatgaatt ctctgtttct atctatgggg acagaaaccc    4740
attctggaac ccccctatat tgaagcccat catcgagtct gtacctacaa cgagaccaaa    4800
caggtgactg tcaagctgcc caactgtgcc ccgggagtcg acccccttcta cacctatccc    4860
gtggccatcc gctgtgactg cggagcctgc tccactgcca ccacggagtg tgagaccatc    4920
tgaggccgct agctgctctc tgcagaccca cctgtgtgag cagcacatgc agttatactt    4980
cctggatgca agactgttta atttcgacca cacccatgga ggaggttacc tgtcgccccct    5040
taggtccagc tcaggcaaaa ggcccaaatg cagcctactt atgctaaaag ttcaaaacaa    5100
tattcgtgcc ttcaccaaaa taatttctcc agctcacata cctgcaaatt aatttttctt    5160
tgccttgagt cttggaacat aatttgtgta tcacaatcct cccccaattt ggacttataa    5220
tatgctaatg atttaaacac atgggatgta attaggatat ggggctggaa agtctttaaa    5280
ttctcatgtt ctatttaacc tctgatctcc aaccggattt atgattaaag ggctagaaat    5340
gaacaaaacc catgtactag tcttccttac cccagaggaa ttccagctgc aagcttcttt    5400
agggaaaatg ctcccttccc cttttaactg agcaattatc tacacaagaa ataagactgc    5460
tcagatatac aaagagagta gcttcaatga aaagatgttt ggatttggat aattcttttc    5520
cctagcaaaa ttcgctagct cccttaagag tcttaataaa gaggctacgt tgggattaaa    5580
agaaaaaaaa acagaaataa aatat                                          5605
```

<210> 4
<211> 1071
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(390)

<400> 4

```
atg aag ctg gca ttc ctc ttc ctt ggc ccc atg gcc ctc ctc ctt ctg       48
Met Lys Leu Ala Phe Leu Phe Leu Gly Pro Met Ala Leu Leu Leu Leu
 1               5                  10                  15

gct ggc tat ggc tgt gtc ctc ggt gcc tcc agt ggg aac ctg cgc acc       96
Ala Gly Tyr Gly Cys Val Leu Gly Ala Ser Ser Gly Asn Leu Arg Thr
            20                  25                  30

ttt gtg ggc tgt gcc gtg agg gag ttt act ttc ctg gcc aag aag cca      144
```

```
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Leu Ala Lys Lys Pro
        35                  40                  45

ggc tgc agg ggc ctt cgg atc acc acg gat gcc tgc tgg ggt cgc tgt      192
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
     50                  55                  60

gag acc tgg gag aaa ccc att ctg gaa ccc ccc tat att gaa gcc cat      240
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala His
 65                  70                  75                  80

cat cga gtc tgt acc tac aac gag acc aaa cag gtg act gtc aag ctg      288
His Arg Val Cys Thr Tyr Asn Glu Thr Lys Gln Val Thr Val Lys Leu
                85                  90                  95

ccc aac tgt gcc ccg gga gtc gac ccc ttc tac acc tat ccc gtg gcc      336
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala
            100                 105                 110

atc cgc tgt gac tgc gga gcc tgc tcc act gcc acc acg gag tgt gag      384
Ile Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125

acc atc tgaggccgct agctgctctc tgcagaccca cctgtgtgag cagcacatgc      440
Thr Ile
    130

agttatactt cctggatgca agactgttta atttcgacca cacccatgga ggaggttacc    500
tgtcgccccc taggtccagc tcaggcaaaa ggcccaaatg cagcctactt atgctaaaag    560
ttcaaaacaa tattcgtgcc ttcaccaaaa taatttctcc agctcacata cctgcaaatt    620
aatttttctt tgccttgagt cttggaacat aatttgtgta tcacaatcct cccccaattt    680
ggacttataa tatgctaatg atttaaacac atgggatgta attaggatat ggggctggaa    740
agtctttaaa ttctcatgtt ctatttaacc tctgatctcc aaccggattt atgattaaag    800
ggctagaaat gaacaaaacc catgtactag tcttccttac cccagaggaa ttccagctgc    860
aagcttcttt agggaaaatg ctcccttccc cttttaactg agcaattatc tacacaagaa    920
ataagactgc tcagatatac aaagagagta gcttcaatga aaagatgttt ggatttggat    980
aattcttttc cctagcaaaa ttcgctagct cccttaagag tcttaataaa gaggctacgt   1040
tgggattaaa agaaaaaaaa acagaaataa a                                  1071
```

<210> 5
<211> 130
<212> PRT
<213> Homo sapiens

<400> 5

```
Met Lys Leu Ala Phe Leu Phe Leu Gly Pro Met Ala Leu Leu Leu Leu
 1               5                  10                  15
Ala Gly Tyr Gly Cys Val Leu Gly Ala Ser Ser Gly Asn Leu Arg Thr
            20                  25                  30
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Leu Ala Lys Lys Pro
        35                  40                  45
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
    50                  55                  60
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala His
65                  70                  75                  80
His Arg Val Cys Thr Tyr Asn Glu Thr Lys Gln Val Thr Val Lys Leu
                85                  90                  95
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala
            100                 105                 110
Ile Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125
Thr Ile
    130
```

<210> 6
<211> 621
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (51)...(398)

<400> 6

```
cagtaaccgc cctgaacaca tcctgcaaaa agcccagaga aaggagcgcc atg gat       56
                                                          Met Asp
                                                           1

tac tac aga aaa tat gca gct atc ttt ctg gtc aca ttg tcg gtg ttt     104
Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser Val Phe
        5                  10                  15

ctg cat gtt ctc cat tcc gct cct gat gtg cag gat tgc cca gaa tgc     152
Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro Glu Cys
    20                  25                  30
```

```
acg cta cag gaa aac cca ttc ttc tcc cag ccg ggt gcc cca ata ctt      200
Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro Ile Leu
 35                  40                  45                  50

cag tgc atg ggc tgc tgc ttc tct aga gca tat ccc act cca cta agg      248
Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro Leu Arg
                 55                  60                  65

tcc aag aag acg atg ttg gtc caa aag aac gtc acc tca gag tcc act      296
Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu Ser Thr
             70                  75                  80

tgc tgt gta gct aaa tca tat aac agg gtc aca gta atg ggg ggt ttc      344
Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly Gly Phe
         85                  90                  95

aaa gtg gag aac cac acg gcg tgc cac tgc agt act tgt tat tat cac      392
Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr Tyr His
    100                 105                 110

aaa tct taaatgtttt accaagtgct gtcttgatga ctgctgattt tctggaatgg      448
Lys Ser
115

aaaattaagt tgtttagtgt ttatggcttt gtgagataaa actctccttt tccttaccat    508
accactttga cacgcttcaa ggatatactg cagctttact gccttcctcc ttatcctaca    568
gtacaatcag cagtctagtt cttttcattt ggaatgaata cagcattaag ctt           621
```

<210> 7
<211> 116
<212> PRT
<213> Homo sapiens

<400> 7

```
Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser
 1               5                  10                  15
Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro
            20                  25                  30
Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro
        35                  40                  45
Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro
    50                  55                  60
```

```
Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu
65                  70                  75                  80
Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly
                85                  90                  95
Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr
            100                 105                 110
Tyr His Lys Ser
        115
```

<210> 8
<211> 92
<212> PRT
<213> Homo sapiens

<400> 8

```
Ala Pro Asp Val Gln Asp Cys Pro Glu Cys Thr Leu Gln Glu Asn Pro
 1               5                  10                  15
Phe Phe Ser Gln Pro Gly Ala Pro Ile Leu Gln Cys Met Gly Cys Cys
            20                  25                  30
Phe Ser Arg Ala Tyr Pro Thr Pro Leu Arg Ser Lys Lys Thr Met Leu
        35                  40                  45
Val Gln Lys Asn Val Thr Ser Glu Ser Thr Cys Cys Val Ala Lys Ser
    50                  55                  60
Tyr Asn Arg Val Thr Val Met Gly Gly Phe Lys Val Glu Asn His Thr
65                  70                  75                  80
Ala Cys His Cys Ser Thr Cys Tyr Tyr His Lys Ser
                85                  90
```

<210> 9
<211> 106
<212> PRT
<213> Homo sapiens

<400> 9

```
Ala Ser Ser Gly Asn Leu Arg Thr Phe Val Gly Cys Ala Val Arg Glu
 1               5                  10                  15
Phe Thr Phe Leu Ala Lys Lys Pro Gly Cys Arg Gly Leu Arg Ile Thr
            20                  25                  30
Thr Asp Ala Cys Trp Gly Arg Cys Glu Thr Trp Glu Lys Pro Ile Leu
        35                  40                  45
Glu Pro Pro Tyr Ile Glu Ala His His Arg Val Cys Thr Tyr Asn Glu
    50                  55                  60
```

```
Thr Lys Gln Val Thr Val Lys Leu Pro Asn Cys Ala Pro Gly Val Asp
65                  70                  75                  80
Pro Phe Tyr Thr Tyr Pro Val Ala Ile Arg Cys Asp Cys Gly Ala Cys
                85                  90                  95
Ser Thr Ala Thr Thr Glu Cys Glu Thr Ile
            100                 105
```

<210> 10
<211> 35
<212> PRT
<213> Homo sapiens

<400> 10

```
Asn Leu Arg Thr Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Leu
 1               5                  10                  15
Ala Lys Lys Pro Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys
            20                  25                  30
Trp Gly Arg
        35
```

<210> 11
<211> 33
<212> PRT
<213> Homo sapiens

<400> 11

```
Lys Lys Pro Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp
 1               5                  10                  15
Gly Arg Cys Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile
            20                  25                  30
Glu
```

<210> 12
<211> 52
<212> PRT
<213> Homo sapiens

<400> 12

```
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala His
 1               5                  10                  15
His Arg Val Cys Thr Tyr Asn Glu Thr Lys Gln Val Thr Val Lys Leu
            20                  25                  30
```

```
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala
        35                  40                  45
Ile Arg Cys Asp
    50
```

<210> 13
<211> 30
<212> PRT
<213> Homo sapiens

<400> 13

```
Asn Glu Thr Lys Gln Val Thr Val Lys Leu Pro Asn Cys Ala Pro Gly
 1               5                  10                  15
Val Asp Pro Phe Tyr Thr Tyr Pro Val Ala Ile Arg Cys Asp
            20                  25                  30
```

<210> 14
<211> 40
<212> PRT
<213> Homo sapiens

<400> 14

```
Arg Glu Phe Thr Phe Leu Ala Lys Lys Pro Gly Cys Arg Gly Leu Arg
 1               5                  10                  15
Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys Glu Thr Trp Glu Lys Pro
            20                  25                  30
Ile Leu Glu Pro Pro Tyr Ile Glu
        35                  40
```

<210> 15
<211> 16
<212> DNA
<213> Homo sapiens

<400> 15

ggsggsgggg sggggs 16

<210> 16
<211> 25
<212> DNA
<213> Homo sapiens

<400> 16

atgaagctgg cattcctctt ccttg 25

<210> 17
<211> 22
<212> DNA
<213> Homo sapiens

<400> 17
cttctggctg gctatggctg tg 22

<210> 18
<211> 23
<212> DNA
<213> Homo sapiens

<400> 18
acagttgggc agcttgacag tac 23

<210> 19
<211> 23
<212> DNA
<213> Homo sapiens

<400> 19
tgctgctcac acaggtgggt ctg 23

<210> 20
<211> 20
<212> DNA
<213> Homo sapiens

<400> 20
gaagcccatc atcgagtctg 20

<210> 21
<211> 21
<212> DNA
<213> Homo sapiens

<400> 21
cacactccgt ggtggcagtg g 21

<210> 22

<211> 393
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(390)

<400> 22

```
atg aag ttg gta tac ctt gtc ctt ggt gca gtg gcc ctc ctt ctc ctg       48
Met Lys Leu Val Tyr Leu Val Leu Gly Ala Val Ala Leu Leu Leu Leu
 1               5                  10                  15

ggt ggc cct gac tct gtc ctc agc agc tcc agt ggg aac ctg cac act       96
Gly Gly Pro Asp Ser Val Leu Ser Ser Ser Ser Gly Asn Leu His Thr
            20                  25                  30

ttt gtg ggc tgt gct gtg agg gaa ttc act ttc atg gcc aag aag cca      144
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Met Ala Lys Lys Pro
        35                  40                  45

ggc tgc agg gga ctt cgg atc acc aca gat gcc tgc tgg ggc cgc tgc      192
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
    50                  55                  60

gag acc tgg gag aaa ccc atc ctg gag cct ccc tac att gaa gcc tat      240
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala Tyr
65                  70                  75                  80

cat cga gtg tgt aca tac aat gag acc aga cag gtg aca gtg aag ctg      288
His Arg Val Cys Thr Tyr Asn Glu Thr Arg Gln Val Thr Val Lys Leu
                85                  90                  95

cct aac tgt gcc cct gga gtc gat cct ttc tac acc tac cct atg gct      336
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Met Ala
            100                 105                 110

gtc cga tgt gac tgt ggg gcg tgt tcc act gcc acc act gag tgt gag      384
Val Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125

acc atc tga                                                         393
```

Thr Ile
130

<210> 23
<211> 130
<212> PRT
<213> Mus musculus

<400> 23

```
Met Lys Leu Val Tyr Leu Val Leu Gly Ala Val Ala Leu Leu Leu Leu
 1               5                  10                  15
Gly Gly Pro Asp Ser Val Leu Ser Ser Ser Ser Gly Asn Leu His Thr
            20                  25                  30
Phe Val Gly Cys Ala Val Arg Glu Phe Thr Phe Met Ala Lys Lys Pro
        35                  40                  45
Gly Cys Arg Gly Leu Arg Ile Thr Thr Asp Ala Cys Trp Gly Arg Cys
    50                  55                  60
Glu Thr Trp Glu Lys Pro Ile Leu Glu Pro Pro Tyr Ile Glu Ala Tyr
65                  70                  75                  80
His Arg Val Cys Thr Tyr Asn Glu Thr Arg Gln Val Thr Val Lys Leu
                85                  90                  95
Pro Asn Cys Ala Pro Gly Val Asp Pro Phe Tyr Thr Tyr Pro Met Ala
            100                 105                 110
Val Arg Cys Asp Cys Gly Ala Cys Ser Thr Ala Thr Thr Glu Cys Glu
        115                 120                 125
Thr Ile
130
```

<210> 24
<211> 32
<212> DNA
<213> Mus musculus

<400> 24

ggccggccac catgaagttg gtataccttg tc 32

<210> 25
<211> 24
<212> DNA
<213> Mus musculus

<400> 25

ctgcagcctg gcttcttggc catg 24

<210> 26
<211> 82
<212> DNA
<213> Mus musculus

<400> 26
agtctgcagg ggacttcgga tcaccacaga tgcctgctgg ggccgctgcg agacctggga 60
gaaacccatc ctggagcctc cc 82

<210> 27
<211> 33
<212> DNA
<213> Mus musculus

<400> 27
gatggcgcgc ctcagatggt ctcacactca gtg 33

<210> 28
<211> 151
<212> DNA
<213> Mus musculus

<400> 28
atgaagttgg tataccttgt ccttggtgca gtggccctcc ttctcctggg tggccctgac 60
tctgtcctca gcagctccag tgggaacctg cacacttttg tgggctgtgc tgtgagggaa 120
ttcactttca tggccaagaa gccaggctgc a 151

<210> 29
<211> 247
<212> DNA
<213> Mus musculus

<400> 29
ctgcagggga cttcggatca ccacagatgc ctgctggggc cgctgcgaga cctgggagaa 60
acccatcctg gagcctccct acattgaagc ctatcatcga gtgtgtacat acaatgagac 120
cagacaggtg acagtgaagc tgcctaactg tgcccctgga gtcgatcctt tctacaccta 180
ccctatggct gtccgatgtg actgtggggc gtgttccact gccaccactg agtgtgagac 240
catctga 247

<210> 30
<211> 32
<212> DNA

<213> Homo sapiens

<400> 30
cgtatcggcc ggccaccatg aagctggcat tc 32

<210> 31
<211> 32
<212> DNA
<213> Homo sapiens

<400> 31
cgtatcggcg cgcctcagat ggtctcacac tc 32

<210> 32
<211> 20
<212> DNA
<213> Homo sapiens

<400> 32
cagttgggca gcttgacagt 20

<210> 33
<211> 20
<212> DNA
<213> Homo sapiens

<400> 33
tgtgccgtga gggagtttac 20

<210> 34
<211> 191
<212> DNA
<213> Homo sapiens

<400> 34
tgtgccgtga gggagtttac tttcctggcc aagaagccag gctgcagggg ccttcggatc 60
accacggatg cctgctgggg tcgctgtgag acctgggaga aacccattct ggaacccccc 120
tatattgaag cccatcatcg agtctgtacc tacaacgaga ccaaacaggt gactgtcaag 180
ctgcccaact g 191

<210> 35
<211> 21
<212> DNA

<213> Homo sapiens

<400> 35
caagactcaa ggcaaagaaa a 21

<210> 36
<211> 20
<212> DNA
<213> Homo sapiens

<400> 36
ttcctggatg caagactgtt 20

<210> 37
<211> 196
<212> DNA
<213> Homo sapiens

<400> 37
ttcctggatg caagactgtt taatttcgac cacacccatg gaggaggtta cctgtcgccc 60
cttaggtcca gctcaggcaa aaggcccaaa tgcagcctac ttatgctaaa agttcaaaac 120
aatattcgtg ccttcaccaa aataatttct ccagctcaca tacctgcaaa ttaatttttc 180
tttgccttga gtcttg 196

<210> 38
<211> 22
<212> DNA
<213> Homo sapiens

<400> 38
acctgtgttc aagattcaaa aa 22

<210> 39
<211> 19
<212> DNA
<213> Homo sapiens

<400> 39
taggggtaag ggcaaagag 19

<210> 40
<211> 221
<212> DNA

<213> Homo sapiens

<400> 40
acctgtgttc aagattcaaa aactggaagg agctccagcc ctgatggtta cttgctatgg 60
aatttttta ataagggga gggttgttcc agctttgatc ctttgtaaga ttttgtgact 120
gtcacctgag aagaggggag tttctgcttc ttccctgcct ctgcctggcc cttctaaacc 180
aatctttcat cattttactt ccctctttgc ccttacccct a 221

<210> 41
<211> 22
<212> DNA
<213> Homo sapiens

<400> 41
cttctggctg gctatggctg tg 22

<210> 42
<211> 23
<212> DNA
<213> Homo sapiens

<400> 42
tgctgctcac acaggtgggt ctg 23

<210> 43
<211> 32
<212> DNA
<213> Homo sapiens

<400> 43
cgtatcggcg cgcctcagat ggtctcacac tc 32

<210> 44
<211> 32
<212> DNA
<213> Homo sapiens

<400> 44
cgtatcggcc ggccaccatg aagctggcat tc 32